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ABSTRACT

This document is a simple 34-category checklist to be used by technicians conducting maintenance surveys. Categories includes: roadways & parking lots; site appearance; site utilities; exterior appearance; playground equipment; exterior structural conditions; gutters and downspouts; windows and caulking; sidewalks; entryways and exit doors; roof conditions; flashing and gravelstop; roofdrains; rooftop equipment; skylights; interior appearance; floors; walls; interior doors; ceilings; electrical distribution; lighting; FCUs/radiators; fire and safety; generators; boilers; air conditioning; ventilation equipment; electrical services; steam distribution; hot water distribution; plumbing; interior subterranean structure. (GR)

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Checklist for School Maintenance Surveys

Maryland State Dept. of Education
1998

1. Roadways & Parking Lots

   A. Positive Drainage
   B. Is Surface Sound [Alligatored or Potholes]?
   C. Ingress - Egress of sufficient width, clearly identified
   D. Parking Spaces - Clearly marked, tire stops
   E. Pedestrian crossings safe and identified
   F. Well lighted

2. Site Appearance

   A. Are lawns and plantings manicured?

      1. Pruning of overgrown, dead or diseased branches.
      2. Is erosion control needed? i.e. berms, swales, inlets
      3. Depressions or tripping hazards
      4. Ruts from vehicular traffic
      5. Leaves or debris against building walls or in areaways

   B. Is rodent control needed?

3. Site Utilities

   A. Are transformers, switchgear, etc. clearly identified and secure [limited access]?
   B. Are fuel tanks properly marked, vented, EPA tested and approved?
   C. Is water supply protected from vandalism and contamination?
   D. Grounding and continuity of lighting protection.
   E. Are storm drains, inlets, culverts, swales free of leaves and other debris?
   F. Are grates and covers safe for vehicular and pedestrian traffic?
   G. Are manhole covers identified, i.e. sanitary, storm, electrical, etc.

      1. Are they overgrown?

   H. Are overhead power supplies free of limbs and other obstruction?

      1. Are they securely attached?

   I. Are fire hydrants flushed and tested regularly.
   J. Are siamese connections identified and free of obstruction?

4. Exterior Appearance

   A. Are painted surfaces well maintained?

      1. Is exterior painting scheduled maintenance, cyclical?

   B. Is building graffiti covered?
   C. Are there bird droppings, discoloration [efflorescence, leaching]?

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5. Playground Equipment

A. Are stanchions and supports firmly secured and stable?
B. Are shackles, chains, and other attachments in place and secure?
C. Are nuts and bolts unevenly worn or rusted?
D. Are there depressions or deep holes beneath equipment?
E. Are bleachers regularly inspected?
F. Is there a PM program and is it documented?

6. Exterior Structural Conditions

A. Foundation - check for settlement and moisture penetration. Check exterior grade for ponding at walls.
B. Floors on Grade - check for cracks, movement, water penetration.
C. Structure - check for movement, termites.
D. Walls - check for cracks.
E. Building Projections - Porches, columns, supports, stairways and railings.

7. Gutters and Downspouts

A. Check gutters for breaks, open joints and sags.
B. Check downspouts for connection to gutters or scupper collectors, check attachments and fasteners.
C. Are gutters, spouts, and rain leaders clean and free flowing?
D. Are splashblocks correctly positioned, is area eroded?
E. Is semi-annual cleaning a part of PM program?

8. Windows & Caulking

A. Windows - Sills movement; openings around sash; glass for chips, cracks and tightness; hardware; proper operation of slide; caulking.
B. Screens - Openings and fastening devices.
C. Special Considerations

1. Window air conditioners present a special set of problems to the building envelope.

a. Air infiltration thru the unit and the window in winter
b. Inability to clean windows
c. Desirable pigeon roost space between sill and unit creating health hazard.

2. Pigeon Control - Any flat surface that is covered will provide a desirable space for pigeon roosts. These areas should be covered with screens, spikes and no-roost materials if at all possible.

9. Sidewalks

A. Broken, cracked, spalling, subsided or uneven surfaces.
B. Proper saw cuts and adequate expansion joints.
C. Expansion board or caulking at intersection with curbs and abutments with walls.

D. Positive drainage from low lying areas.
E. Handicapped accessibility; curb cuts, ramps, etc.
F. Railings and barriers in place and securely fastened.

10. Entryways & Exit Doors

A. Hardware - Locks, hinges, panic devices, latches, closures, striker plates.
B. Frame - Alignment with door, weather seals, caulking
C. Operation - Will doors open freely with a maximum force of 15 lbs. (Normally ask small child to open door in kindergarten).

11. Roof Conditions

A. Built-up Flat - Inspect for exposed coatings and felts, blisters, buckling, severe alligatoring, ponding and cracking.
B. Slate - Inspect for missing cracked or broken slate, failure of fasteners, warping of roof.
C. Tile Roofing - Inspect for broken or missing tile and fasteners.
D. Wood Shake - Inspect for decay, warping and splitting of shingles and deterioration of nails.
E. Galvanized Steel - Inspect for loss of zinc coating, rusting and opening of seams.
F. Aluminum - Inspect for atmosphere corrosion.
G. Asphalt Shingle - Inspect for missing, broken or warped shingles and erosion of mineral granules.
H. Asphalt Roll - Inspect for buckling, loose nails, alligatoring of coating, cracks and blisters.

SEE ENCLOSED CHECKLIST

12. Flashing & Gravelstop

A. Capstone - Inspect for moisture penetration, grout, caulking, shifting, cracking.
B. Baseflashings - Punctures, deterioration, blistering, open laps, attachment, ridging or wrinkling.
C. Edging - For thermal or wind induced movement.

13. Roofdrains

A. Is there positive drainage?
B. Caulking cracked, separated, or missing where drain pipe (leader) enters drain.
C. Drain plugged or sluggish; bowl filled with bitumen or debris.
D. Weepholes in drain casting plugged.
E. Clamping rings loose when viewed from below.
F. Roofing damaged or defective around drain.

14. Rooftop Equipment

A. Ventilation Fans

1. Are covers in place and securely attached.
2. Belts worn, frayed, properly aligned.
3. Fan and motor bearings lubricated.
4. Motor overheating.
5. Properly wired; weatherseal, remote disconnect.
6. Record of PM

B. Air Cooled Condensers

1. Coils clean and damaged.
2. Belts
3. Motor Lubrication
4. Leaks; Corrosion, Erosion

C. Cooling Towers

1. Spray nozzle operation
2. Float Valve Operation
3. Cleanliness; pan, algae growth, rust
4. Fan Drive and Bearings

15. Skylights

A. Condition of glass; broken, cracked, discolored or faded.
B. Glazing, caulking, weatherstrip, flashings.
C. Curbstops and attachment.

16. Interior Appearance

A. Overall cleanliness and sanitation.
B. Clean, bright, and cheerful.

17. Floors

A. Tile; broken, cracked, missing.

1. Uneven surfaces, tripping hazards.
2. ACM's

B. Carpet; torn, ridging, seam separation, edging, threshold strips at doors, threadbare. Fire rated.

18. Walls

A. In need of painting or repair.
B. Are they structurally sound?
C. Is there a cyclical painting schedule?

19. Interior Doors

A. Hardware - Locks, hinges, panic devices, closures, striker plates, door stops, silencers.
B. Surfaces - Veneer separation, paint, splintered, stiles sound.
C. Frame - Alignment with door.
D. Operation - Do doors open and close freely?
E. Fire Rating - If necessary.

20. Ceilings

A. Tiles (Suspend or Interlocking) - Stained, missing or broken. Grids and runners in place and securely fastened.
B. Plaster, other - Are surfaces sound, flaking, cracking, moisture damaged. Need painting.

21. Electrical Distribution

A. Are there sufficient numbers of outlets? Are they functional?
B. Is there ground fault interruption in wet areas?
C. Are light switches working, properly wired and grounded?
D. Are there extension cords in use, are they approved?
E. Are there circuits overloaded?
F. Is all wiring properly enclosed?

22. Lighting

A. Ballast or bulbs needed.
B. Diffusers or lens missing or broken.
C. Wiring properly enclosed.
D. Re-lamping program or plan.
E. Energy conservation program.
F. PCB removal.

23. FCU's/Radiators

A. Are filters properly installed? Are they clean?
B. Are coils clean?
C. Are bearings and motors lubricated?
D. Belt condition.
E. Are controls functioning as designed?
F. Are dampers operational?
G. Condition of cabinets.

24. Fire & Safety

A. Exits - Are they clearly marked? Fully illuminated? Unobstructed?
B. Extinguishers - Missing, discharged, outdated, identified.
C. Sprinkler System - Heads obstructed, testing performed and recorded, siamese connections identified and unobstructed.
D. Combustible materials - Chemicals inventoried, identified, properly stored.
E. Smoke Containment Doors - Fire rated, automatic actuators functioning.
F. Fire Drills - Are they being documented?

25. Equipment Rooms/Generator

A. Are equipment/mechanical rooms clearly defined and free of clutter, not used as storage rooms?
B. Is machinery identified?
C. Is PM being performed and recorded?
D. Are disconnects accessible?
E. Are guards and safety devices in place?
F. Is generator operational, maintained, recorded?
G. Is generator exercised weekly?

26. Boilers/Water Heaters

A. Are inspection certificates current and properly displayed?
B. Burners

1. Inspect all control valves and linkage for tightness and proper operation.
2. Inspect gas pilot system for leaks and proper operating pressure.
3. Inspect all electrical connections for tightness and presence of oil or water.
4. Inspect burner fan or combustion air fan and motor.
5. Inspect burner throat tile and combustion chamber refractory.
6. Inspect burner nozzle for proper alignment.
7. Prepurge time.
8. Ignition time of pilot.
9. Pilot flame response signal.
10. Ignition of main flame.
11. Main flame response signal.
12. Character of main flame.

C. Fuel Oil & Gas Piping

1. Inspect fuel oil pumps and piping for leaks
2. Inspect gauges and system for proper operating pressure.

D. Are annual efficiency tests performed?
E. Is energy conservation practiced?

27. Air Conditioning

A. Fans - belts, lube, alignment
B. Pumps - Leaks, lube, couplings, vibration, gauges
C. Compressors - Intake filter, oil leaks, oil level, noise, water in air tank.
D. Motors - Oil filters, noise, overheating
E. Controls - Are schematics available, has system been cannibalized. Gauges working, EP's and PE's disconnected.
F. Chillers - Oil level in sump, water temperatures in & out of evaporator and condenser, piping for leaks, gauges, actuators, water treatment, PM records. Rupture disc properly vented.
G. Absorption Cold Generators - Belt tension, safety controls, records of operation and PM>
H. Condensers (Water) - Condition of water, water temperature and pressure, water leaks, record of operation and PM.

28. Ventilation Equipment

A. AHU's

1. Filters in need of service.
2. Heating/Cooling coils dirty or leaking.
3. Ductwork in need of cleaning or repair
4. Instrumentation broken or inoperable.
5. Pneumatic/Electrical lines disconnected, broken.
6. Drive belts frayed, broken, improperly sized, etc.
7. Pulleys and shafts out of alignment or in need lubrication.
8. Safety guards, shields, etc. missing or broken.
9. Water/Steam piping leaking, uninsulated, unidentified.
10. Actuators and linkage broken or obstructed.
11. Outside air intakes obstructed.

B. Exhaust Fans

1. Is there air movement?
2. Are bathrooms fans automatically activated?
3. Are diffusers and grills clean and unobstructed?

29. Electrical Service

A. Underground ducts and manhole free of water and debris.
B. Access limited to authorized persons.
C. Condition of cable fireproofing, cable supports and ground connections.
D. Location of duct runs documented and marked.
E. Supply and service panels clearly marked including all breakers.
F. Overloads or piggy-backing.
G. Inventory of critical breakers, fuses, etc. on hand.
H. PCB's

30. Steam Distribution

A. Leaks, corroded, eroded lines. Missing insulation.
B. Excessive condensate return (Is make-up monitored?)
C. Condensate and sump pump operation.
D. Program for trap testing and replacement.
E. Function of all safety devices, gauges, valves, etc.
F. Are valves identified and operational, are they exercised?

31. Hot Water Distribution

A. Piping for leaks, corrosion, insulation.
B. Pumps for leaks, lube, and noise.
C. Temperature and pressure gauges.
D. Automatic air relief.
E. Valves for proper operation, including automatic actuators.
F. Valve charts posted.
G. Piping color coded including flow direction.
H. Strainers and filters clean.

32. Chilled Water Distribution

A. All items including in hot water distribution.

33. Plumbing

A. Piping for leaks, corrosion, insulation, marking
B. Valves for leaks, operation, marking.
C. Main incoming supply for backflow prevention.

1. Operation and accessibility

D. Water closets, urinals, flushometers, faucets, etc. for leaks and operation.
E. Hot water heaters for safety relief, proper temperature, and controls.
F. Backflow prevention on all hose bibs, service sinks, sill cocks.
G. Dry traps and floor drains.
H. Multi-compartment sinks for proper trapping of drain lines. Air Gap.
I. Sanitary waste lines properly vented.
J. Hot water temperature at hand basins.

34. Interior Subterranean Structure [Underground-Basement-Crawlspace]

A. Walls for settlement and moisture penetration.
B. Structural steel for rust, corrosion, movement, cracks, welds, and attachments.
C. Concrete beams, columns, supports, floors and docks plank for cracks, movement, or spalling.
D. Earthen areas for termites, vermin, and rodent infestation.
E. Penetration through exterior walls for screens, louvers, doors, grates.
F. Groundwater and seepage.